

# **BALD HEAD ISLAND SETTLEMENT MONITORING SURVEYS**

## **REPORT 3: July 2005**

### **Introduction**

The 3rd set of monitoring surveys for the Settlement Agreement between the Village of Bald Head Island and the United States Army Corps of Engineers were taken in July 2005. The criteria to be used in examining the surveys is to be a continuous passage through Smith Island Channel, Baldhead Shoal Channel Reach 1 and Baldhead Shoal Channel Reach 2 with a minimum bottom width of 500 feet at a depth of -42 feet mean lower low water (mllw).

### **Data**

The 2<sup>nd</sup> set of monitoring surveys taken in May 2005 is displayed in Figure 1 and is labeled May 2005 Surveys. Figure 2 is a plot of surveys taken in July 2005 and Figure 3 is a difference plot between the May and July surveys.

A plot for Smith Island Channel of the navigable widths at a depth of -42 feet mllw (navigable depth) is shown in Figure 4. MLLW is 2 inches lower than mlw at Bald Head Island. Plots of the minimum channel cross sections at stations 20+00 and 35+00 are shown in Figures 5 and 6. The baselines for the cross section plots are shown in Figure 1.

A plot for Baldhead Shoal Channel Reach 1 of the navigable widths at a depth of -42 feet mllw is contained in Figure 7. A plot of the minimum cross section in the vicinity of the spit formation at station 20+00 is shown in Figure 8. A plot of the minimum channel cross section at station 34+00 is shown in Figure 9.

A plot for Baldhead Shoal Channel Reach 2 of the navigable widths at a depth of -42 feet mllw is contained in figure 10. Plots of the minimum channel cross sections at stations 65+00 and 80+00 are shown in figures 11 and 12.

### **Conclusion**

The minimum navigable width at a depth of -42 feet mllw exceeds 500 feet in all three channels.

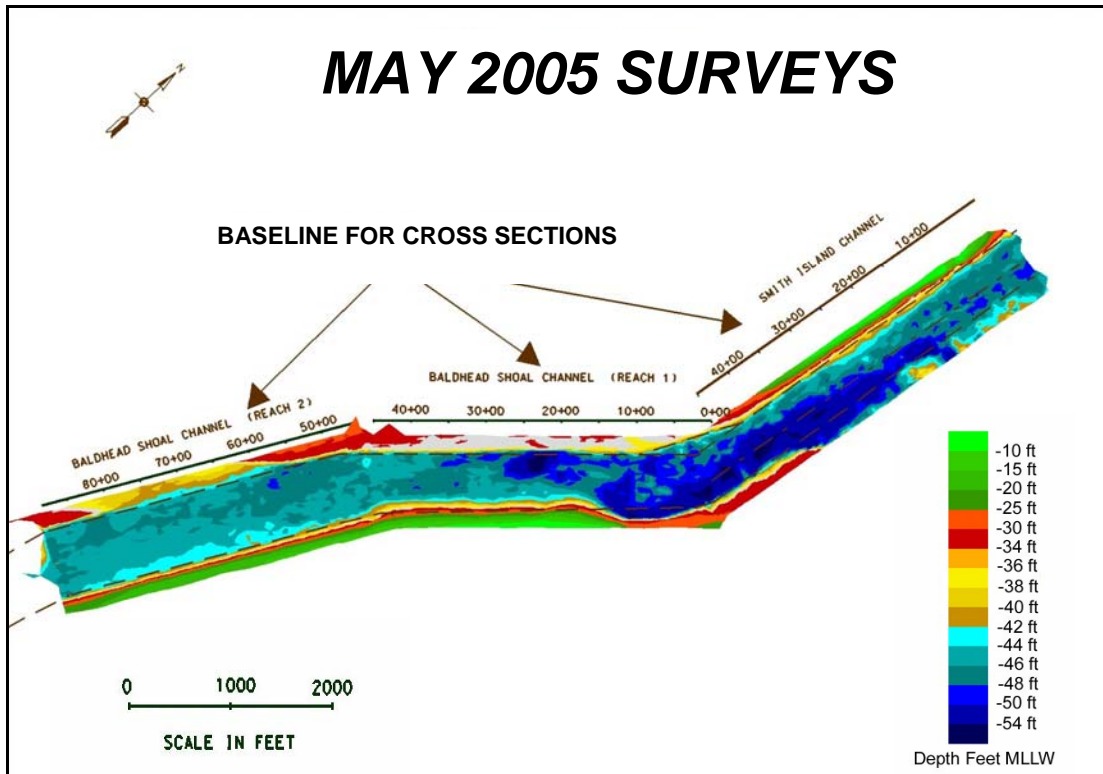


Figure 1 May 2005 Surveys.

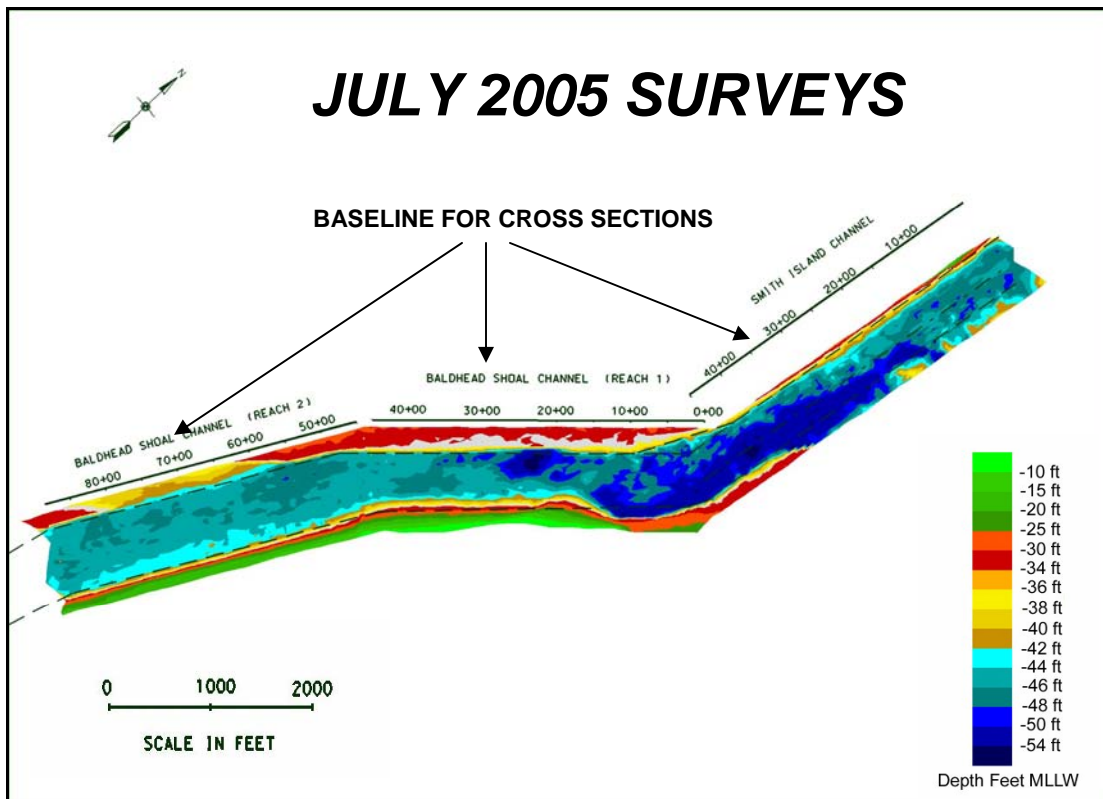


Figure 2 July 2005 Surveys.

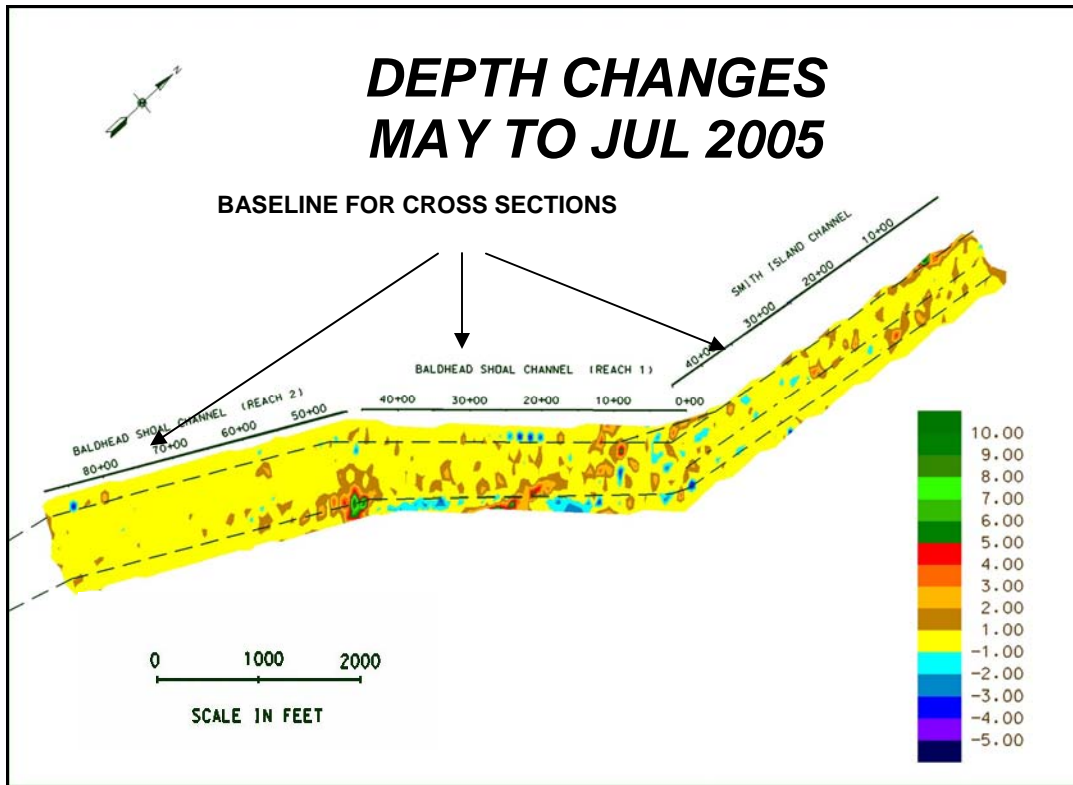


Figure 3 March to May Depth Changes.

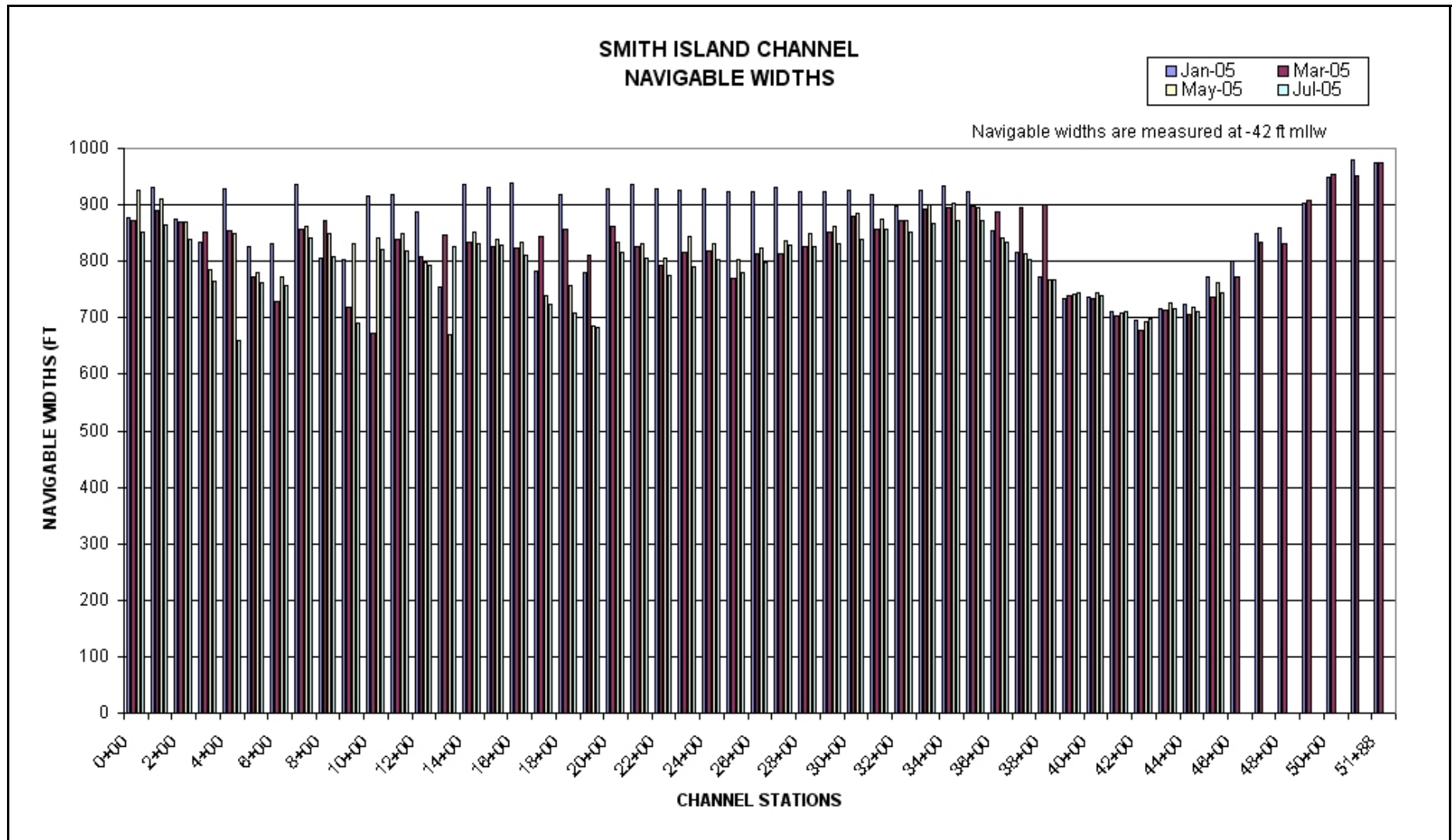
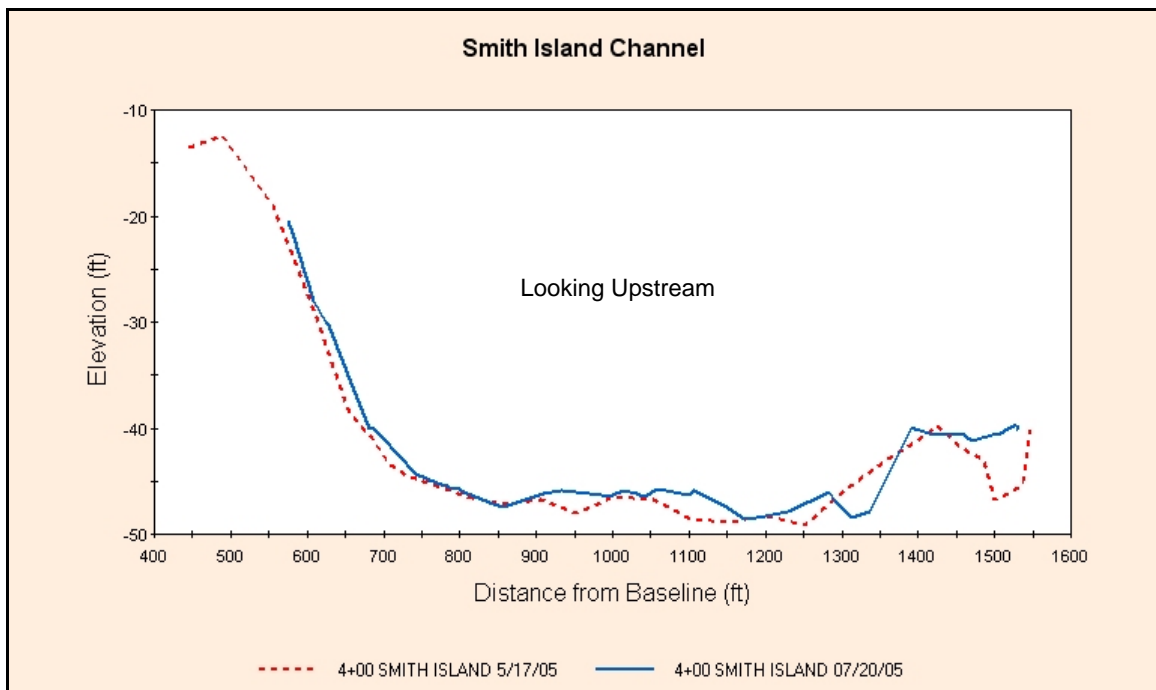
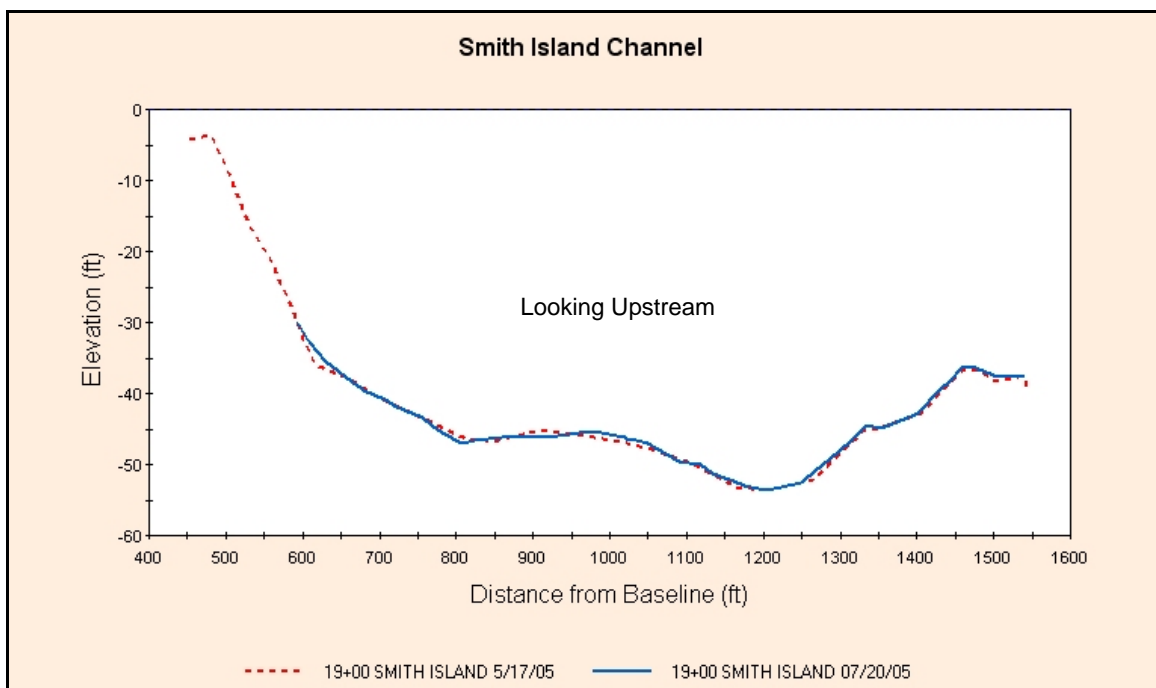


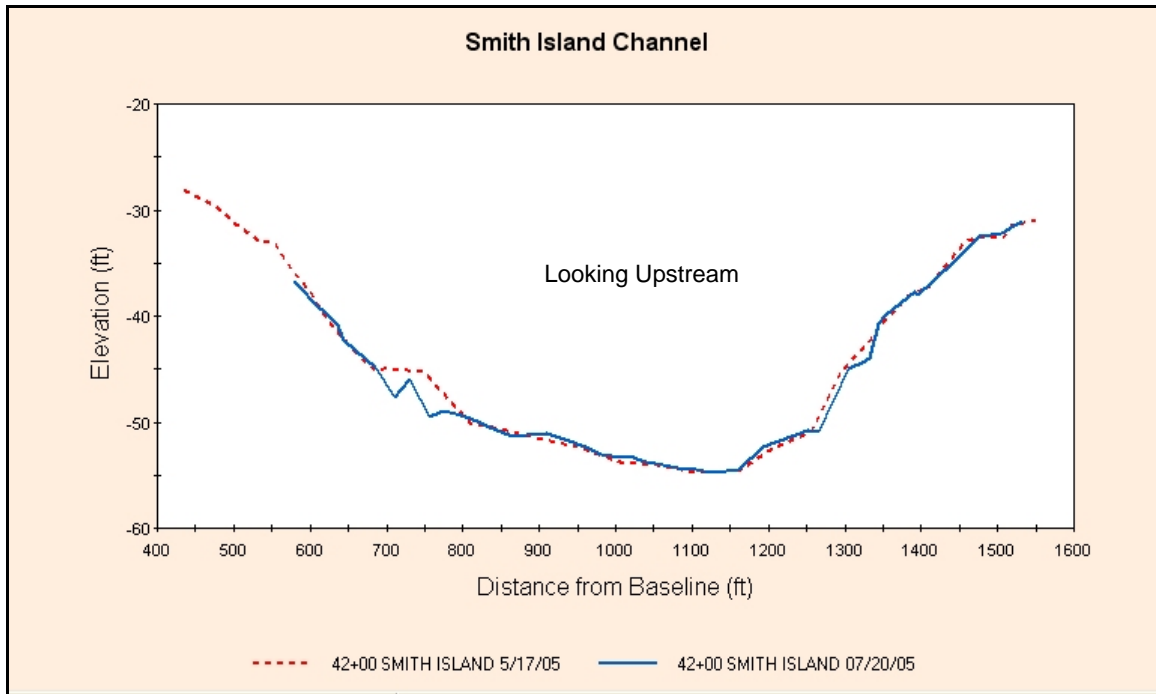
Figure 4 Smith Island Channel Navigable Widths.



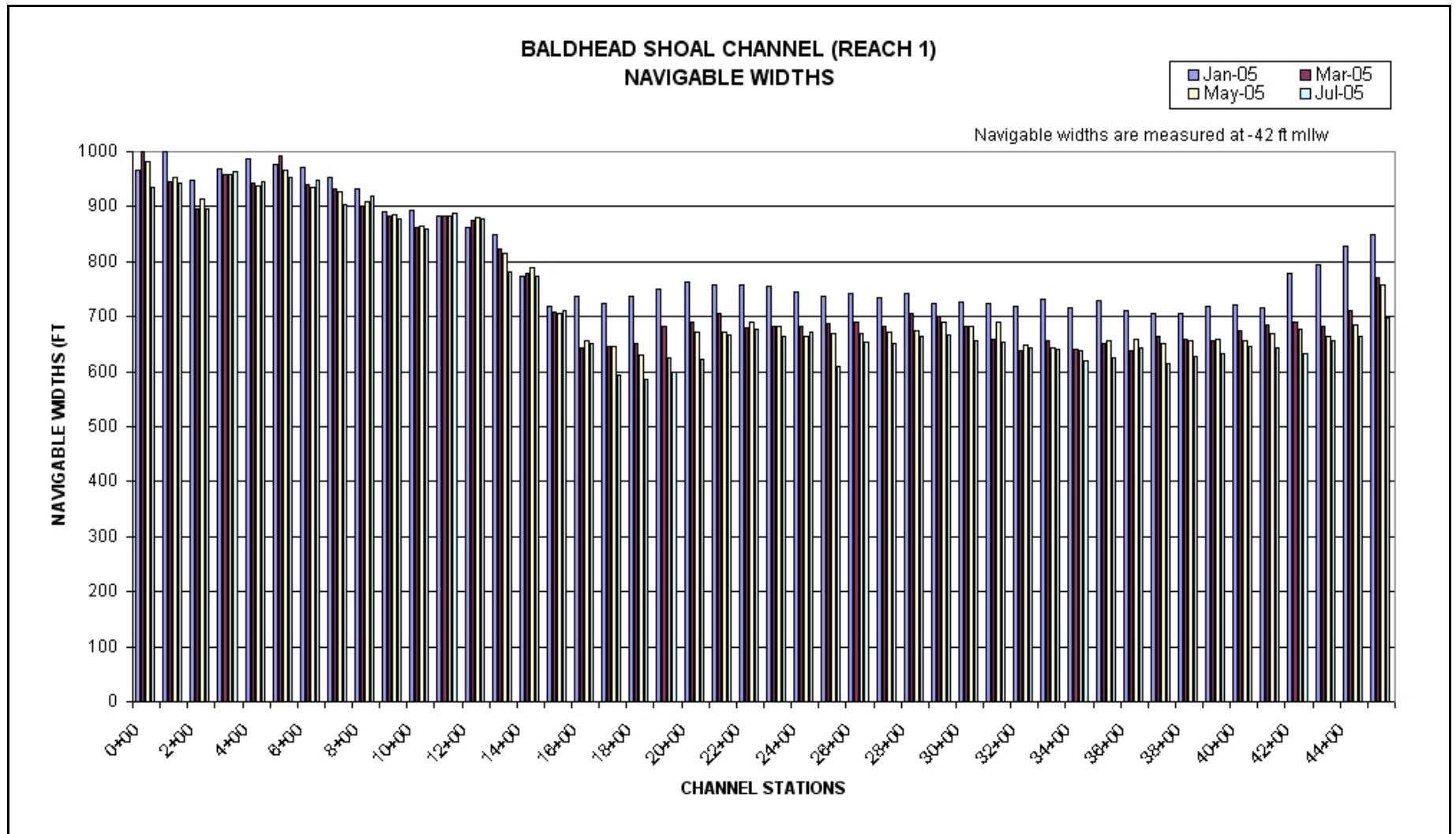
**Figure 5 Smith Island Channel Station 4+00.**



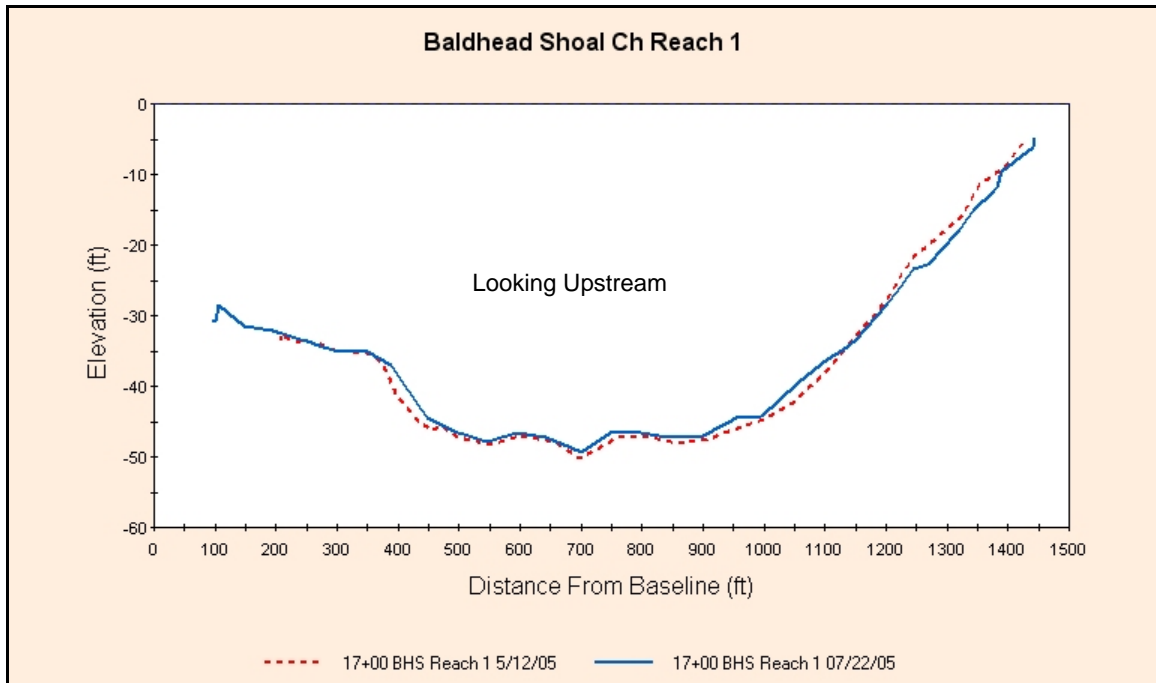
**Figure 6 Smith Island Channel Station 19+00.**



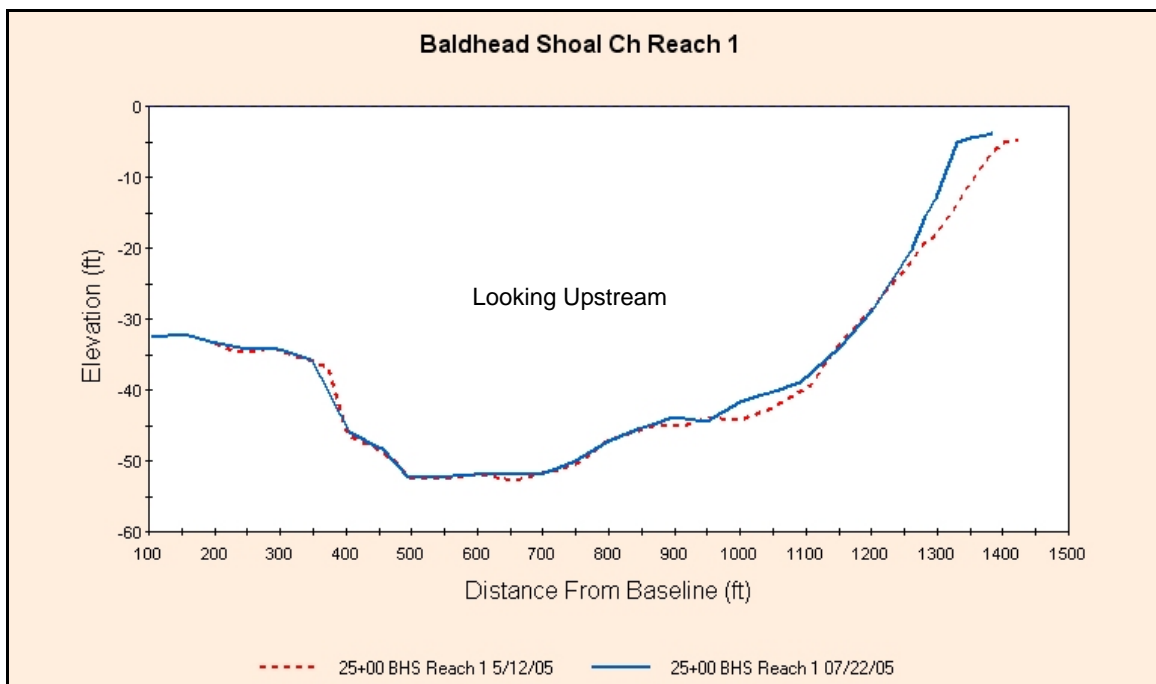
**Figure 6 Smith Island Channel Station 42+00.**



**Figure 7 Baldhead Shoal Reach 1 Navigable Widths.**



**Figure 8 Baldhead Shoal Station 17+00.**



**Figure 9 Baldhead Shoal Station 25+00.**



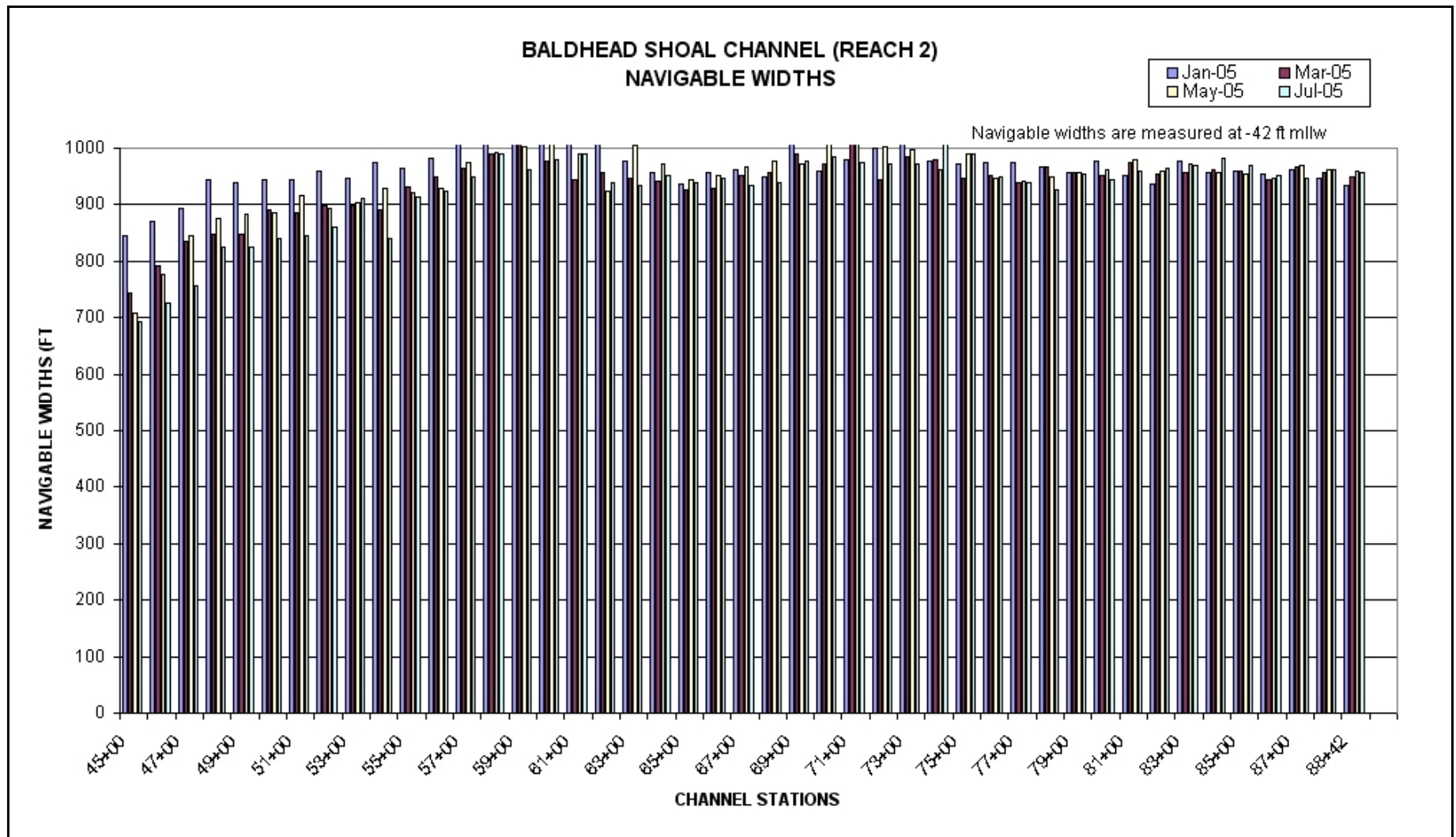
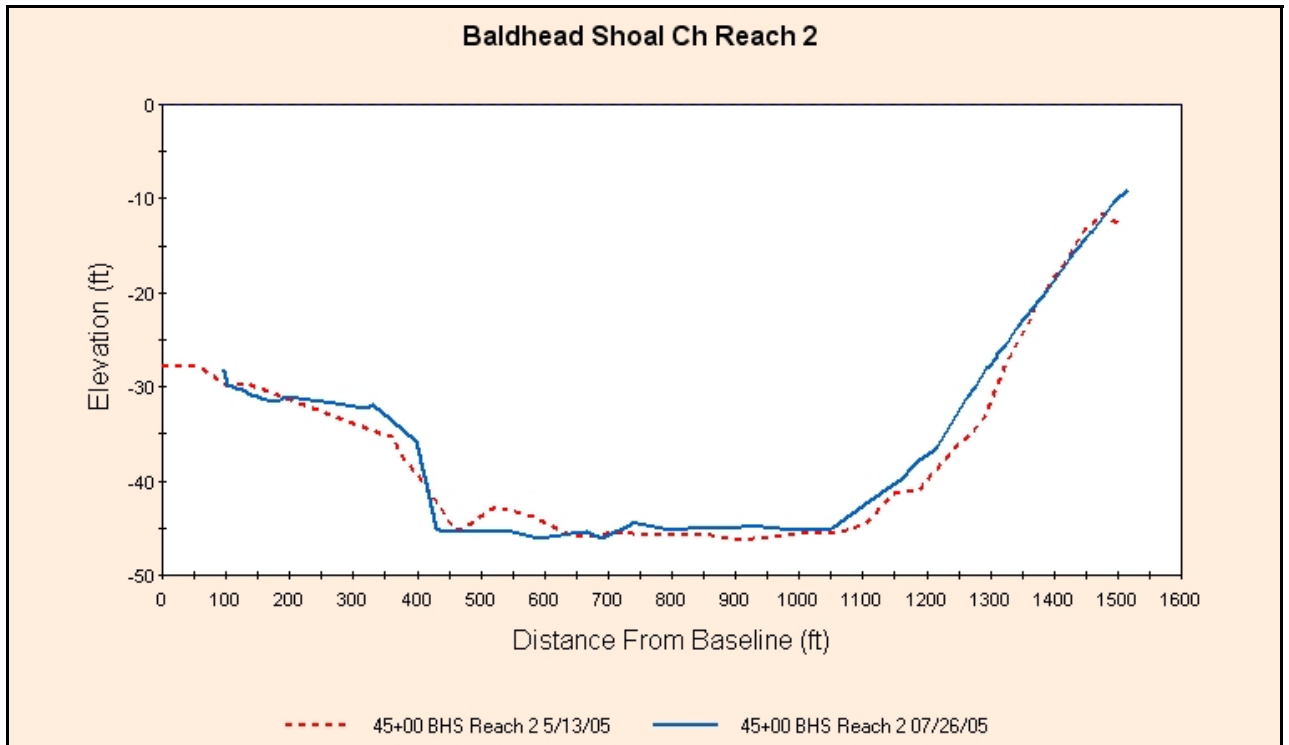


Figure 10 Baldhead Shoal Channel Reach 2 Navigable Widths.



**Figure 11 Baldhead Shoal Station 45+00.**